

LISTING OF THE CLAIMS:

Claim 1 (Previously Presented): A film in a display device, having a high transmittance and matt property, comprising, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device.

Claims 2 and 3 (Canceled)

Claim 4 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7.

Claim 5 (Canceled)

Claim 6 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7, and wherein said low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 7 (Canceled)

Claim 8 (Currently Amended): A polarizing plate in a display device, having a high transmittance and matt property, comprising a polarizing layer and two protective films thereon, wherein at least one of the protective films is ~~the~~ a film having a high transmittance and matt property, ~~according to any one of claims 1, 4 or 6,~~ and wherein a matted layer is disposed at the opposite side to the polarizing layer, wherein:

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is

larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/m², and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/m², and wherein the particles are

monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are

monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7, and wherein said low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 9 (Currently Amended): A liquid crystal display device, comprising the film having a high transmittance and matt property according to any one of claims 1, 4 or 6,
wherein:

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure,

wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/m², and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the

particles is in a range of from 100 to 5000 particles/m², and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7, and wherein said low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 10 (Currently Amended): A liquid crystal display device, comprising two polarizing plates provided on both sides of a liquid crystal cell, wherein the polarizing plate provided at the back light side is ~~the~~ a polarizing plate having a high transmittance and matt property ~~according to claim 8~~, the matted layer being disposed toward the back light side, wherein the polarizing plate having a high transmittance and matt property comprises a

polarizing layer and two protective films thereon, wherein at least one of the protective films is a film having a high transmittance and matt property, wherein a matted layer is disposed at the opposite side to the polarizing layer, wherein:

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7, and wherein said low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 11 (Canceled)

Claim 12 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein an average particle diameter of the particles is larger than the thickness of the hard coat layer by 0.5 to $5.0\mu\text{m}$.

Claim 13 (Canceled)

Claim 14 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein the density of the particles is in a range of 200 to 2000 particles/ m^2 .

Claim 15 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein the low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 16 (Canceled)

Claim 17 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein said film is provided on at least one side of a polarizing layer to form a polarizing plate of the display device, and wherein the concavo-convex structure of a surface of the film is disposed at the side opposite to the polarizing layer,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the polarizing plate is brought into contact with a smooth surface of a layer of the display device.

Claim 18 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein said film is provided on at least one side of a polarizing layer to form a polarizing plate of the display device, and wherein the concavo-convex structure of a surface of the film is disposed at the side opposite to the polarizing layer,

wherein said polarizing plate is arranged in the display device such that the concavo-convex structure is disposed toward a back light side, and the polarizing plate is located next to a light tuning film layer, without being bonded to the light tuning film layer, with a slight gap existing therebetween such that the concavo-convex structure occasionally contacts a smooth surface of the light tuning film layer during operation of the display device,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matter property of the film, when the concavo-convex structure of a surface of the polarizing plate is brought into contact with the smooth surface of the light tuning film layer that is elongated by heating during operation of the display device.